

Test Paper : III  
Test Subject : EARTH SCIENCE  
Test Subject Code : K-3216

Test Booklet Serial No. : \_\_\_\_\_  
OMR Sheet No. : \_\_\_\_\_  
Roll No. 

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(Figures as per admission card)

**Name & Signature of Invigilator/s**

Signature : \_\_\_\_\_  
Name : \_\_\_\_\_

Paper : III  
Subject : EARTH SCIENCE

Time : 2 Hours 30 Minutes

Maximum Marks : 150

Number of Pages in this Booklet : 16

Number of Questions in this Booklet : 75

**ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು**

- ಈ ಪುಟದ ಮೇಲ್ಭಾಗದಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.
- ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ಎಪ್ಪತ್ತೈದು ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
- ಪರೀಕ್ಷೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ, ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ನಿಮಗೇ ನೀಡಲಾಗುವುದು. ಮೊದಲನೆಯ ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರಿಶೀಲಿಸಲು ಕೋರಲಾಗಿದೆ.  
(i) ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗೆ ಪ್ರವೇಶಾಪಕ ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ವಿಚ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರೆದ ಪತ್ರಿಕೆಯನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.  
(ii) ಪತ್ರಿಕೆಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳಿ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪ್ರಶ್ನೆಗಳನ್ನು ಕೂಡಲೇ ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವೀಕ್ಷಕರಿಂದ ಸರಿ ಇರುವ ಪತ್ರಿಕೆಗೆ ಬದಲಾಯಿಸಿಕೊಳ್ಳಬೇಕು. ಆ ಬಳಿಕ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಬದಲಾಯಿಸಲಾಗುವುದಿಲ್ಲ, ಯಾವುದೇ ಹೆಚ್ಚು ಸಮಯವನ್ನೂ ಕೊಡಲಾಗುವುದಿಲ್ಲ.
- ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ (A), (B), (C) ಮತ್ತು (D) ಎಂದು ಗುರುತಿಸಿದ ನಾಲ್ಕು ಪರ್ಯಾಯ ಉತ್ತರಗಳಿವೆ. ನೀವು ಪ್ರಶ್ನೆಯ ಎದುರು ಸರಿಯಾದ ಉತ್ತರದ ಮೇಲೆ, ಕೆಳಗೆ ಕಾಣಿಸಿದಂತೆ ಅಂಡಾಕೃತಿಯನ್ನು ಕಪ್ಪಾಗಿಸಬೇಕು.  
ಉದಾಹರಣೆ :  (A)  (B)  (C)  (D)  
(C) ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದಾಗ.
- ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಗಳನ್ನು ಪತ್ರಿಕೆ III ಪ್ರಶ್ನೆಗಳಿಗೆ ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮಾತ್ರವೇ ಸೂಚಿಸತಕ್ಕದ್ದು. OMR ಹಾಳೆಯಲ್ಲಿನ ಅಂಡಾಕೃತಿ ಹೊರತುಪಡಿಸಿ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
- OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
- ಎಲ್ಲಾ ಕರೆಡು ಕೆಲಸವನ್ನು ಪತ್ರಿಕೆಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
- ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು, ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆದರೆ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗಿರುತ್ತೀರಿ.
- ಪರೀಕ್ಷೆಯು ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
- ಪರೀಕ್ಷೆಯ ನಂತರ, ಪರೀಕ್ಷಾ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
- ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿರಿ.
- ಕ್ಯಾಲ್ಕುಲೇಟರ್, ವಿದ್ಯುನ್ಮಾನ ಉಪಕರಣ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿಯ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.
- ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ.
- ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳು ಕಂಡುಬಂದಲ್ಲಿ, ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳಲ್ಲಿರುವುದೇ ಅಂತಿಮವೆಂದು ಪರಿಗಣಿಸಬೇಕು.

**Instructions for the Candidates**

- Write your roll number in the space provided on the top of this page.
- This paper consists of seventy five multiple-choice type of questions.
- At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :  
(i) To have access to the Question Booklet, tear off the paper seal on the edge of the cover page. Do not accept a booklet without sticker seal or open booklet.  
(ii) Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.
- Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.  
Example :  (A)  (B)  (C)  (D)  
where (C) is the correct response.
- Your responses to the question of Paper III are to be indicated in the OMR Sheet kept inside the Booklet. If you mark at any place other than in the circles in OMR Sheet, it will not be evaluated.
- Read the instructions given in OMR carefully.
- Rough Work is to be done in the end of this booklet.
- If you write your name or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, you will render yourself liable to disqualification.
- You have to return the test OMR Answer Sheet to the invigilators at the end of the examination compulsorily and must NOT carry it with you outside the Examination Hall.
- You can take away question booklet and carbon copy of OMR Answer Sheet after the examination.
- Use only Blue/Black Ball point pen.
- Use of any calculator, Electronic gadgets or log table etc., is prohibited.
- There is no negative marks for incorrect answers.
- In case of any discrepancy found in the Kannada translation of a question booklet the question in English version shall be taken as final.



**EARTH SCIENCE**  
**Paper – III**

**Note :** This paper contains **seventy-five (75)** objective type questions. **Each** question carries **two (2)** marks. **All** questions are **compulsory**.

1. CO<sub>2</sub> rich fluids are characteristics of
  - (A) Sandstone
  - (B) Granites
  - (C) Charnockites
  - (D) Quartzites
2. Petrogenesis of granites can be understood using the ternary diagram
  - (A) Qtz-Ab-An system
  - (B) Ab-An-Diop system
  - (C) Diop-Oli-An system
  - (D) Oli-Diop-An system
3. Sub-ophitic texture in the intergrowth between
  - (A) Olivine and pyroxene
  - (B) Diopside and plagioclase
  - (C) Plagioclase and quartz
  - (D) Olivine and quartz
4. Tsunami are generated in coastal areas due to
  - (A) Large scale faulting in continental crust
  - (B) Reverse faulting in shear zones
  - (C) Block faulting in continents
  - (D) Reverse faulting in ocean region
5. Autocogens are
  - (A) Fault bounded troughs
  - (B) Fault bounded domes
  - (C) Synclinal structures
  - (D) Anticlinal structures
6. Deposits of chromite, Cu-Ni-Sulfides, PGE are essentially hosted in \_\_\_\_\_ rocks.
  - (A) Mafic-ultramafic
  - (B) Intermediate
  - (C) Felsic
  - (D) Metamorphic



7. Fluid inclusions that are randomly distributed in 3-dimensions are
- (A) Primary
  - (B) Secondary
  - (C) Pseudo-secondary
  - (D) Homogeneous
8. For determining the optic sign in minerals \_\_\_\_\_ is used.
- (A) Interference figure
  - (B) Interference colours
  - (C) Universal stage
  - (D) Michael-Levy's chart
9. Crystallization of minerals from high temperature, resulting in expulsion of certain phases due to cooling gives rise to \_\_\_\_\_ texture.
- (A) Colloform
  - (B) Cavity-filling
  - (C) Exsolution
  - (D) Replacement

10. Match the following
- |                       |                 |
|-----------------------|-----------------|
| 1. Cap rock           | a. Anticline    |
| 2. Reservoir rock     | b. Shale        |
| 3. Structural trap    | c. Unconformity |
| 4. Stratigraphic trap | d. Sandstone    |
- 1    2    3    4
- (A) b    d    a    c
  - (B) a    b    c    d
  - (C) b    c    d    a
  - (D) c    d    b    a
11. Jadeite is a gem variety of
- (A) Quartz
  - (B) Feldspar
  - (C) Garnet
  - (D) Pyroxene
12. Ruby is the gem variety of
- (A) Kyanite
  - (B) Beryl
  - (C) Corundum
  - (D) Plagioclase



13. Rock/Ore pieces collected in a regular pattern is \_\_\_\_\_ sampling.

- (A) Grab
- (B) Chip
- (C) Planar
- (D) Mineralogical

14. Mineral exploration based on chemical analysis of plant organs is \_\_\_\_\_ method.

- (A) Geobotanical
- (B) Biogeochemical
- (C) Geochemical
- (D) Organic

15. Vitrain, durain, clarain and fusain are \_\_\_\_\_ contents of coal.

- (A) Microscopic
- (B) Gaseous
- (C) Ash
- (D) Macroscopic

16. Match the following :

- |             |               |
|-------------|---------------|
| 1. Steatite | a. Abrasive   |
| 2. Mica     | b. Pigment    |
| 3. Garnet   | c. Insulator  |
| 4. Ochre    | d. Electrical |

Codes :

- |     |          |          |          |          |
|-----|----------|----------|----------|----------|
|     | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| (A) | c        | a        | b        | d        |
| (B) | c        | d        | a        | b        |
| (C) | b        | a        | c        | d        |
| (D) | a        | b        | c        | d        |

17. U-Pb method of isotopic dating is done in minerals like

- (A) Plagioclase
- (B) Hornblende
- (C) Zircon
- (D) Biotite

18. Eutectic temperature of crystallization of Anorthite and diopside is

- (A) 750°C
- (B) 1435°C
- (C) 999°C
- (D) 1270°C



19. High pressure polymorph of  $\text{SiO}_2$  is
- (A)  $\alpha$ -Quartz
  - (B) Crystabolite
  - (C) Coesite
  - (D)  $\beta$ -Quartz
20. Isothermal decompression P-T path in granulite indicate
- (A) Collisional tectonic event
  - (B) Extensional tectonic event
  - (C) Both collisional and extensional tectonic event
  - (D) Plume tectonics
21. Low-P and Low-T in LIL elements is characteristics of
- (A) Chlorite schist
  - (B) Granulites
  - (C) Gneiss
  - (D) Amphibolites
22. Stromatolites indicate early life in
- (A) Proterozoic
  - (B) Palaeozoic
  - (C) Mesozoic
  - (D) Cenozoic
23. In a dip-slip fault, the rake of net slip of an inclined fault is
- (A)  $80^\circ$
  - (B)  $60^\circ$
  - (C)  $25^\circ$
  - (D)  $90^\circ$
24. What is the host rock copper deposit of Ingaldal area in Karnataka ?
- (A) Granite
  - (B) Syenite
  - (C) Metabasalt
  - (D) Phyllite
25. The largest deposits of Lead-Zinc-copper in India are located in
- (A) Dharwar craton
  - (B) Singhbhum craton
  - (C) Bastar craton
  - (D) Aravalli craton
26. Cuestas are characteristic of areas of
- (A) Alluvial plains
  - (B) Steep near vertical beds
  - (C) Rocks with gentle/moderate dips
  - (D) Horizontal beds



27. Late Maastrichtian fresh water sediments in India is represented by \_\_\_\_\_ beds.
- (A) Bagh  
(B) Zewan  
(C) Lameta  
(D) Niniyur
28. Invariant point in phase diagram indicate when
- (A)  $F = 0$   
(B)  $F = 1$   
(C)  $F = 3$   
(D)  $F = 2$
29. Velocity of the water column is reduced with depth and leads to \_\_\_\_\_ spiral and the net movement of water is  $90^\circ$  to the wind direction is called \_\_\_\_\_ transport.
- (A) Sverdrup, Ekman  
(B) Stommel, Munk  
(C) Munk, Stommel  
(D) Ekman, Ekman
30. Ozone not only act as a green house gas to outgoing \_\_\_\_\_ radiation, but also intercepts and absorbs \_\_\_\_\_ radiation.
- (A) Short wave, thermal  
(B) Long wave, solar ultra-violet  
(C) Microwave, near infrared  
(D) Microwave, far infrared
31. Khondalite has the following mineralogy
- (A) Qtz + plag + bio+ ilm  
(B) Plag + Hbl + bio + mag  
(C) Diop + Hbl + plag + ilm  
(D) Qtz + plag + sill + bio + ilm
32. The major and minor principal stresses are  $\sigma_1$  and  $\sigma_3$  respectively acting with in a body. A plane is inclined at an angle  $\theta$  to the direction of the minor principal stress  $\sigma$ . Then  $\left[ \frac{\sigma_1 - \sigma_3}{2} \right] \sin \theta$  is the
- (A) Normal stress  
(B) Shear stress  
(C) Tensile stress  
(D) Compressive stress



- 33.** The term  $K_D$  refers to
- (A) Distribution of elements within a mineral
  - (B) Site occupancy of elements in minerals
  - (C) Structural disorder in minerals
  - (D) Partitioning of elements between two co-existing minerals
- 34.** Mineral pigeonite belongs to
- (A) Amphibole group
  - (B) Mica group
  - (C) Pyroxene group
  - (D) Epidote group
- 35.** Baryte deposits occur in
- (A) Gulcheru quartzites
  - (B) Vempalle limestones
  - (C) Tadpatri shales
  - (D) Kolamnala shales
- 36.** The dissecting plane of OAA in optically positive minerals is
- (A)  $\alpha$
  - (B)  $\beta$
  - (C)  $\gamma$
  - (D)  $\alpha$  and  $\gamma$
- 37.** Arrange the following suture patterns in an ascending order of evolution.
- (1) Ammonite
  - (2) Goniatite
  - (3) Ceratite
- (A) 1, 2, 3
  - (B) 2, 3, 1
  - (C) 2, 1, 3
  - (D) 3, 1, 2
- 38.** The term polymorphism is used for
- (A) Minerals having different composition and crystal structure
  - (B) Metamict minerals
  - (C) Minerals having different densities and composition
  - (D) Minerals with same composition but different crystal structure
- 39.** \_\_\_\_\_ structure is formed in a tidal environment.
- (A) Stylolites
  - (B) Herringbone
  - (C) Graded bedding
  - (D) Ripple marks



40. Identify the youngest stratigraphic unit from the following :
- (A) Iron ore group
  - (B) Cuddaph Super group
  - (C) Talchir Formation
  - (D) Subathu Formation
41. Curved portions of the roof intersecting the top of the tunnel wall referred as
- (A) Toe
  - (B) Pay-line
  - (C) Spring-line
  - (D) Spill way
42. K-Ar method of dating rocks is used for
- (A) Granites
  - (B) Basalts
  - (C) Peridotites
  - (D) Komatites
43. Which of the following is non-clastic ?
- (A) Siltstone
  - (B) Shale
  - (C) Limestone
  - (D) Sandstone
44. Choose the microfossil group which occurs in deep-sea below CCD.
- (A) Foraminifera
  - (B) Cocoliths
  - (C) Ostrocoda
  - (D) Radiolarians
45. Tributaries join the main stream pointing upstream expressed by \_\_\_\_\_ drainage pattern.
- (A) Rectangular
  - (B) Barbed
  - (C) Trellis
  - (D) Dendritic
46. Choose the largest felsic volcanic province of India.
- (A) Rajmahal traps
  - (B) Sylthet traps
  - (C) Deccan traps
  - (D) Panjal traps
47. Identify the correct genetic sequence of Karst landforms.
- (A) Doline → Polje → Uvala
  - (B) Doline → Uvala → Polje
  - (C) Polje → Doline → Uvala
  - (D) Uvala → Doline → Polje





48. The circum-pacific belt is also known as
- (A) Ring of corals
  - (B) Ring of canyons
  - (C) Ring of Trenches
  - (D) Ring of Fire
49. Fragmentation of Gondwana took place during
- (A) Cenozoic
  - (B) Archean
  - (C) Mesozoic
  - (D) Precambrian
50. The horizontal distribution of mean sea level pressure is shown by means of
- (A) Isohyet
  - (B) Isobar
  - (C) Isotherm
  - (D) Isocline
51. Seawater intrusion into the freshwater aquifer can controlled by
- (A) Cultivation of Paddy, in the low lying coastal areas
  - (B) Limiting the extraction of ground water
  - (C) Recharging through the wells along the coast
  - (D) Intense pumping along the coast
52. Water mass mixing is critical for ecosystem productivity as it bring \_\_\_\_\_ to the surface and \_\_\_\_\_ to deeper waters.
- (A) Sediments,  $\text{CO}_2$
  - (B) Oxygen, nitrogen
  - (C) Nutrients, oxygen
  - (D)  $\text{CO}_2$ ,  $\text{SO}_2$
53. Pixel stands for
- (A) Picture Element
  - (B) Photo Element
  - (C) Picture Elevation
  - (D) Photo Enhancement
54. In aerial photography, yellow, magenta and Cyan are referred to as complementary colours, because when paired, they produce \_\_\_\_\_ light.
- (A) Yellow
  - (B) Blue
  - (C) White
  - (D) Magenta
55. \_\_\_\_\_ act as scavenging agents.
- (A) Waves
  - (B) Tides
  - (C) Currents
  - (D) Tsunamis



56. High grade manganese nodules are mainly concentrated between \_\_\_\_\_ in the central Indian basin.

- (A)  $10^{\circ}$  N and  $20^{\circ}$  N
- (B) Equator and  $16^{\circ}$ N
- (C) Equator and  $16^{\circ}$ S
- (D)  $10^{\circ}$  S and  $16^{\circ}$ S

57. An electromagnetic wave is composed of both electric and magnetic vectors that are

- (A) Orthogonal to each other
- (B) Parallel to each other
- (C) Oblique to each other
- (D) Circular in shape

58. Which term represents the following phrase :

A reduced nutrient availability which leads to low productivity ?

- (A) Ecological efficiency
- (B) Oligotrophication
- (C) Primary production
- (D) Eutrophication

59. The "Black smokers" contain \_\_\_\_\_ and \_\_\_\_\_

- (A) Barium, calcium
- (B) Silicon, magnesium
- (C) Iron, sulphur
- (D) Boron, crypton

60. Match the following :

- |                      |   |
|----------------------|---|
| a. Sea wall          | 1. Protection of beach with sediment                    |
| b. Break water       | 2. Coastal protection structure parallel to beach       |
| c. Groin             | 3. Coastal engineering structure perpendicular to beach |
| d. Beach nourishment | 4. Navigation channel                                   |

**a      b      c      d**

- (A) 2    3    4    1
- (B) 3    2    1    4
- (C) 1    2    3    4
- (D) 2    4    3    1

61. The two properties of an aquifer material related to its storage function are

- (A) Porosity and specific yield
- (B) Permeability and specific yield
- (C) Porosity and permeability
- (D) Porosity and rock type



62. The presence of melange is characteristic feature of

- (A) Layered complex
- (B) Metamorphic aureole
- (C) Skarn rocks
- (D) Ophiolite

63. Match the following :

- |                             |   |
|-----------------------------|---|
| 1. Angular<br>unconformity  | a. Irregular,<br>eroded surface<br>between<br>parallel rock<br>strata   |
| 2. Disconformity            | b. The lower order<br>strata dip at a<br>different angle<br>to the younger<br>upper strata                          |
| 3. Non-conformity           | c. The strata<br>either side<br>of the<br>unconformity<br>dip in the same<br>direction and by<br>the same<br>amount |
| 4. Parallel<br>unconformity | d. A sequence of<br>strata overlies<br>an eroded<br>surface of<br>igneous or<br>metamorphic<br>rock                 |

Answers :

- |     |          |          |          |          |
|-----|----------|----------|----------|----------|
|     | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
| (A) | c        | d        | a        | b        |
| (B) | b        | a        | d        | c        |
| (C) | d        | c        | a        | b        |
| (D) | b        | d        | a        | c        |

64. Sediments that have absolutely no oxygen are said to be

- (A) Anoxic
- (B) Hypoxia
- (C) Shadow zone
- (D) Oxic

65. The folds that develop in an incompetent bed lying between the two competent beds are called

- (A) Flexural folds
- (B) Parasitic folds
- (C) Similar folds
- (D) Drag folds

66. In a drainage basin, the ratio of the number of each order of streams to the number of the next higher order is known as the \_\_\_\_\_ ratio.

- (A) Bifurcation
- (B) Density
- (C) Antecedent
- (D) Subsequent



67. The plunge of a fold is defined as
- (A) Intersection of the axial surface with any bed
  - (B) Angle between an axis and its horizontal projection
  - (C) The plane dividing the fold into two halves
  - (D) Dip of the inverted limb of a fold

68. The mid-oceanic ridges are formed and evolve as a result of spreading Earth's lithosphere at the \_\_\_\_\_ boundaries between tectonic plates and cover a total distance of \_\_\_\_\_ km.

- (A) Convergent; ~ 45,000
- (B) Divergent; ~ 65,000
- (C) Marginal; ~ 45,000
- (D) Centre of; ~ 50,000

69. Choose the typical sandy beach structures

- (a) Swash marks
- (b) Rill marks
- (c) Flute marks
- (d) Browsing traces

**Answers :**

- (A) a, b and d
- (B) b, c and d
- (C) a, c and d
- (D) b and d

70. Match the following and select the correct option from the code given below :

- |                         |                 |
|-------------------------|-----------------|
| a. Chemical composition | 1. Ionosphere   |
| b. Thermal structure    | 2. Chemosphere  |
| c. Ionic structure      | 3. Homosphere   |
| d. Chemical structure   | 4. Stratosphere |

**Codes :**

- |     | a | b | c | d |
|-----|---|---|---|---|
| (A) | 2 | 4 | 1 | 3 |
| (B) | 3 | 4 | 2 | 1 |
| (C) | 3 | 4 | 1 | 2 |
| (D) | 4 | 3 | 1 | 2 |

71. The water flows downward due to gravity but rises near \_\_\_\_\_ due to its tendency to flow \_\_\_\_\_ to water level.

- (A) Valley; perpendicular
- (B) Radial; the centre
- (C) Valley; Parallel
- (D) Inclined; the plane



72. Which of the following elements of image are used in image interpretation ?

- (A) Tone and colour
- (B) Texture and pattern
- (C) Shape and size
- (D) All of the above

73. Match the following and select the correct option from the codes given below :

<b>Electromagnetic Spectral Region</b>	<b>Wavelength</b>
1. Ultraviolet	a. 0.7 to 3.0 $\mu\text{m}$
2. Visible	b. 0.3 to 0.4 $\mu\text{m}$
3. Infrared	c. 3 to 5 $\mu\text{m}$
4. Thermal infrared	d. 0.4 to 0.7 $\mu\text{m}$

**Codes :**

- |     | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> |
|-----|----------|----------|----------|----------|
| (A) | a        | c        | b        | d        |
| (B) | d        | b        | a        | c        |
| (C) | c        | a        | d        | b        |
| (D) | b        | d        | a        | c        |

74. Match the following in Group I with those of Group II :

<b>Group I</b>	<b>Group II</b>
a. Arthropoda	i. Sponges
b. Porifera	ii. Gangampteris
c. Mollusca	iii. Paradoxides
d. Plant fossil	iv. Conus

**a    b    c    d**

- (A) iii, i, iv, ii
- (B) ii, iv, iii, i
- (C) iv, ii, i, iii
- (D) i, ii, iii, iv

75. If the axis of a fold is undulatory, the high points on an axis are called

- (A) Culminations
- (B) Depressions
- (C) Boudins
- (D) Mullions



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